carrier could achieve such a market share. It would be a definite challenge to achieve such a goal because other alternative carriers would also be free to enter the market, thus eroding the first alternate carrier's market share and putting pressure on price. However, this does provide an upper range on estimated demand and revenue for the analysis of the sensitivity of our results.

5.5 Summary business case analysis: A discounted cash flow approach

The capital, expense and revenue components of the business case are combined in a standard capital budgeting model format taken from Brigham, *Fundamentals of Financial Management*, and R. Brealey and S. Myers, *Principles of Corporate Finance*. We apply the discounted cash flow business case methodology using the capital costs,[169] marketing costs, customer service costs, interconnection costs along with taxes, depreciation, and potential sales revenue.

In order to implement this approach, we proceed as follows:

1. Find the present value of each cash flow, including both inflows and outflows, discounted at the project's cost of capital.

2. Sum these discounted cash flows; this sum is defined as the project's NPV (Net Present Value).

3. If the NPV is positive, the project should be accepted, while if the NPV is negative, it should be rejected. If two projects are mutually exclusive, the one with the higher NPV should be chosen.[170]

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168. (...continued)
Proceeding on Motion of the Commission to Evaluate New York Telephone Company's Network Modernization Plans.

169. It is critical to somehow "annualize" the capital costs including depreciation and rate of return rather than to leave the analysis with an insufficient statement such as 'initial capital costs are $800'. Such a statement reveals little about the potential profitability of the investment. The method that we use here in our capital budgeting model follows the general economic logic presented in, for example, Hulten, C., "The Measurement of Capital," in Berndt, E., and J. Triplett, eds., *Fifty Years of Economic Measurement*, Chicago: University of Chicago Press, 1990; Diewert, W. E., "Aggregation Problems in the Measurement of Capital," in Usher, D., ed., *The Measurement of Capital*, Chicago: University of Chicago Press, 1980; and Jorgenson, D. and K. Yun, *Tax Reform and the Cost of Capital*, Oxford: Clarendon Press, 1991.

170. Brigham, *op. cit.*, footnote 148, at 346.

Our scenarios range from a low penetration, low revenue per subscriber, relatively pessimistic scenario, to a high penetration, high revenue per subscriber result. Our basic analysis is for a market of 200,000 potential subscribers. This value represents a typical configuration for a cable operator in the largest cities in which entry into telephony is likely. The largest one hundred individual cable systems range in size from the Viacom Cablevision system in Puget Sound Washington with 398,000 subscribers to Time Warner Cable in Orange County, California with 90,000 subscribers.[171] Only the top 15 systems are larger than 200,000 subscribers.[172] Thus, our choice seems on the higher end of the size distribution of the major cable systems; however, it is in just such markets where it appears that entry is most likely.

We present the results for the cable business case for this 200,000 potential market in Table 5.1 under four scenarios ranging from pessimistic to optimistic. Scenarios A and B represent an assumed (final year) average revenue per subscriber of $35 per month and Scenarios C and D assume a (final year) average revenue figure of $50. Scenarios A and C assume a final penetration (in the 15th year) of 18% of the market while Scenarios B and D represent an extremely optimistic 30% ultimate penetration. All results are displayed for both a 14% and a more realistic 18% cost of capital.[173]

The cable results show that only the very optimistic scenarios are profitable; all scenarios produce a positive cash flow only after some 5 to 8 years of operation. For example, scenario C — with ultimately 18% penetration and an average revenue of $50 — is not acceptable if the cable operator's cost of capital is 18%; it is profitable if the assumed cost of capital is 14%. The $35 average revenue scenarios A and B never

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171. Paul Kagan and Associates, Inc., *The Cable TV Financial Databook, 1993 Edition*, Carmel, Ca.: Kagan Associates, 1993, at 37-38.

172. One might argue that much larger configurations could be considered for large metropolitan areas which encompass multiple cable TV owners. However, there are quite significant coordination costs (and uncertainties) involved in the joint ownership and operation of a such large scale switching control point. As an example, the metropolitan Boston area includes the operations of seven (7) different cable owners. Thus time consuming and costly tasks would have to be undertaken to serve a "large" area on a unified basis.

173. The correct cost of capital to use as a discount factor should be based on a weighted average of the component cost of debt, preferred stock and common equity. See, e.g., Brigham, *op. cit.* footnote 148, at 310. This value would vary by company. In our analysis, we present the results for a realistic range of alternatives currently applicable to the cable industry. As of this date, the FCC has tentatively identified a range of 10% to 14% as a reasonable rate of return for cable companies in the implementation of the Cable Act of 1992. (FCC, *In the Matter of Implementation of Sections of the Cable Act of 1992*, Notice of Proposed Rulemaking, MM Docket No. 93-215 regarding Cost of Service Matters, Released July 16, 1993.) Cable companies cited somewhat higher values than the 14%. See, e.g., Pitch, P., "Implementation and Analysis of Cost of Service Regulation for the Cable Service Industry", August 25, 1993, Appendix to the Comments of the Community Antenna Television Association, Inc. in FCC Docket MM 93-215. It seems clear that telephony on cable is far riskier than cable services alone; thus 18% seems to be a more reasonable assumption. We present the results with both values in the tables.

produce a profitable outcome. The extremely optimistic scenario D — with high average revenue of $50 and high eventual penetration of 30% — is profitable over the 15 year horizon but even it does not generate positive cash flow until after 5 years.

Table 5.1

Business Case Results
Provision of Local Telephone Service

By Cable Television Company
15 Year Horizon

	Pessimistic <----------> Optimistic			
Scenario*	A	B	C	D
First Year of Positive Cash Flow	8	7	6	5
Years to Breakeven**	15	15	14	11
NPV*** per Subscriber at 14% Cost of Capital	($174)	($95)	$58	$137
NPV per Subscriber at 18% Cost of Capital	($192)	($127)	($19)	$46

*The scenario assumptions are: (A) final year price of $35 and 18% penetration; (B) final year price of $35 and 30% penetration; (C) final year price of $50 and 18% penetration; and (D) final year price of $50 and 30% penetration.

**Year when the cumulative discounted (14%) cash flow becomes positive. In scenarios A and B, "breakeven" is longer than the 15 year horizon.

***NPV is "Net Present Value". Projects with negative NPV (shown in parenthesis) would not normally be undertaken in such a situation; there is a high risk that the overall rate of return will be less than the cost of capital.

The results for the wireless scenarios also produce similar results. (The basic scenario assumptions are the same as for cable entry.) The results are shown in Table 5.2. With high market share of 30% and high average revenue of $50, scenario D shows a profitable outcome for both of the 14% and 18% cost of capital alternatives. However, again it takes time to generate a positive cash flow — anywhere from 7 to 8 years depending on the

Table 5.2

Business Case Results
Provision of Local Telephone Service

By Wireless/PCS Company
15 Year Horizon

	Pessimistic <----------			> Optimistic
Scenario*	A	B	C	D
First Year of Positive Cash Flow	8	8	7	7
Years to Breakeven**	15	15	15	13
NPV*** per Subscriber at 14% Cost of Capital	($229)	($150)	$ 4	$83
NPV per Subscriber at 18% Cost of Capital	($226)	($162)	($53)	$11

*The scenario assumptions are: (A) final year price of $35 and 18% penetration; (B) final year price of $35 and 30% penetration; (C) final year price of $50 and 18% penetration; and (D) final year price of $50 and 30% penetration.

**Year when the cumulative discounted (14%) cash flow becomes positive. In scenarios A and B, "breakeven" is longer than the 15 year horizon.

***NPV is "Net Present Value". Projects with negative NPV (shown in parenthesis) would not normally be undertaken in such a situation; there is a high risk that the overall rate of return will be less than the cost of capital.

scenario.[174]

In order to illustrate the methodology that was used to obtain the results in Tables 5.1 and 5.2, we present some of the details of the capital budgeting model in Table 5.3 for the cable industry provision of local service telephony. There, a summary spreadsheet shows the development of scenario D — the optimistic outcome with high average revenue and high eventual penetration. This produces the calculation of the $137 and $46 NPV values

174. The general similarity of the results between cable and wireless is interesting because the initial wireless capital cost per subscriber is some $1030 per subscriber and that for cable is only $745. The reason for this result is that some $960 of the wireless capital costs can be incurred as new subscribers are added (i.e., deferred into the future) whereas only $585 of the cable capital costs can be incurred as new subscribers are added. This shows the value of the complete dynamic financial analysis that we use here.

that were already shown in Table 5.1. The full spreadsheets for all cable and PCS scenarios are shown in the Appendix to this chapter.[175]

Table 5.3

Capital Budgeting Analysis
15 Year Horizon
Additional Expenses and Revenues for Cable Entry into Local Telephone Service
Optimistic Scenario D

	Year 1	Year 2	Year 3	Year 15
Capital Investment Expenses	$12,309,840	$383,760	$1,535,040	$1,918,800
Market Size	200,000	200,000	200,000	200,000
Percent Penetration	1.64%	1.97%	3.28%	29.52%
Subscribers	3,280	3,936	6,560	59,040
Average Price Per Month	$46.00	$46.29	$46.57	$50.00
Local Tel Price % of LEC	80%	81%	83%	100%
Sales Revenue	$1,810,560	$2,186,167	$3,666,103	$35,424,000
Total Expenses	$3,352,480	$3,413,834	$3,878,449	$11,684,127
Net Income	($940,571)	($748,877)	($129,531)	$14,481,323
Net Cash Flow	($12,334,559)	($261,501)	($748,920)	$14,287,104
NPV Per Subscriber (at 14%)	$137			
NPV Per Subscriber (at 18%)	$46			

The categories in the summary table include a full development of the total revenue with the assumptions already detailed. Total expenses include the initial capital expenses, as well as expenses for marketing, customer service, maintenance, interconnection, and depreciation. Net income takes into account taxes, including any negative amounts assuming that they will be offset by other income of the alternative provider's corporation.

175. The overall results are generally similar for both smaller and larger potential market sizes for both cable and PCS.

Net cash flow adds back in depreciation to net income and represents the cash position of that year.[176] Net present value is calculated on the basis of target final subscribers for comparison among the alternative scenarios.

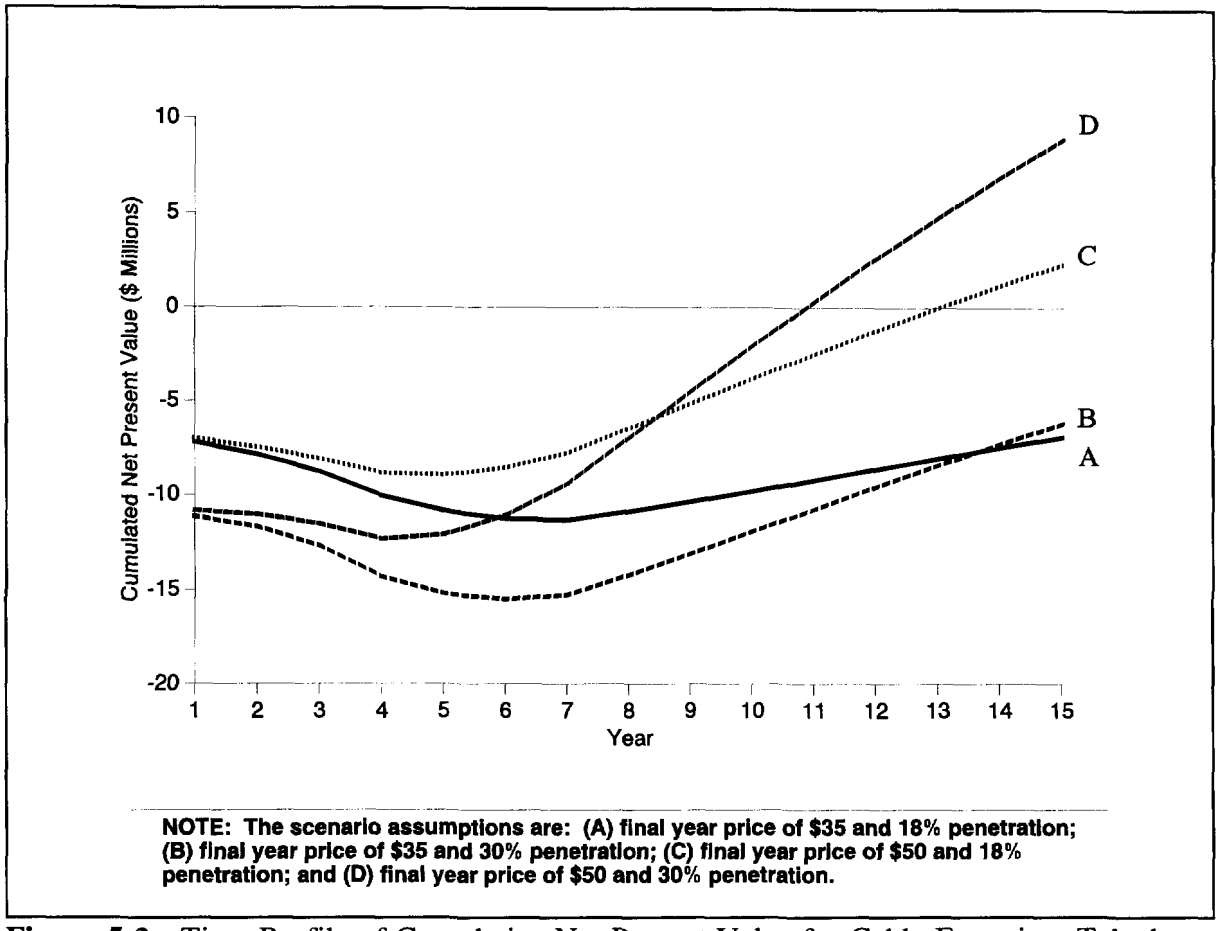

Figure 5.3. Time Profile of Cumulative Net Present Value for Cable Entry into Telephony for Scenarios A through D.

Additional analysis of the four scenarios is useful to provide insight into the pattern of costs incurred over time. Figure 5.3 shows the pattern of cumulated net present value over the 15 year horizon for the cable provision of telephony scenarios. The values start at significant negative values accounting for the capital expenditure start-up costs. Heavy marketing costs in the early years cause the value to decline even further until the revenue increases in years 5 to 8 begin to take hold. The optimistic scenarios C and D, with the higher penetration and higher average price assumptions, eventually create a positive NPV

176. Depreciation is set at 8% and the tax rate is set at 39%. The depreciation calculation allows for 7% of capital expenditures for land and increases in working capital. Since these parameters are only involved in the calculation of the tax to be subtracted from net income, alternative values yield similar results.

in the later years of the project. Figure 5.4 shows a similar pattern for the PCS wireless scenarios.

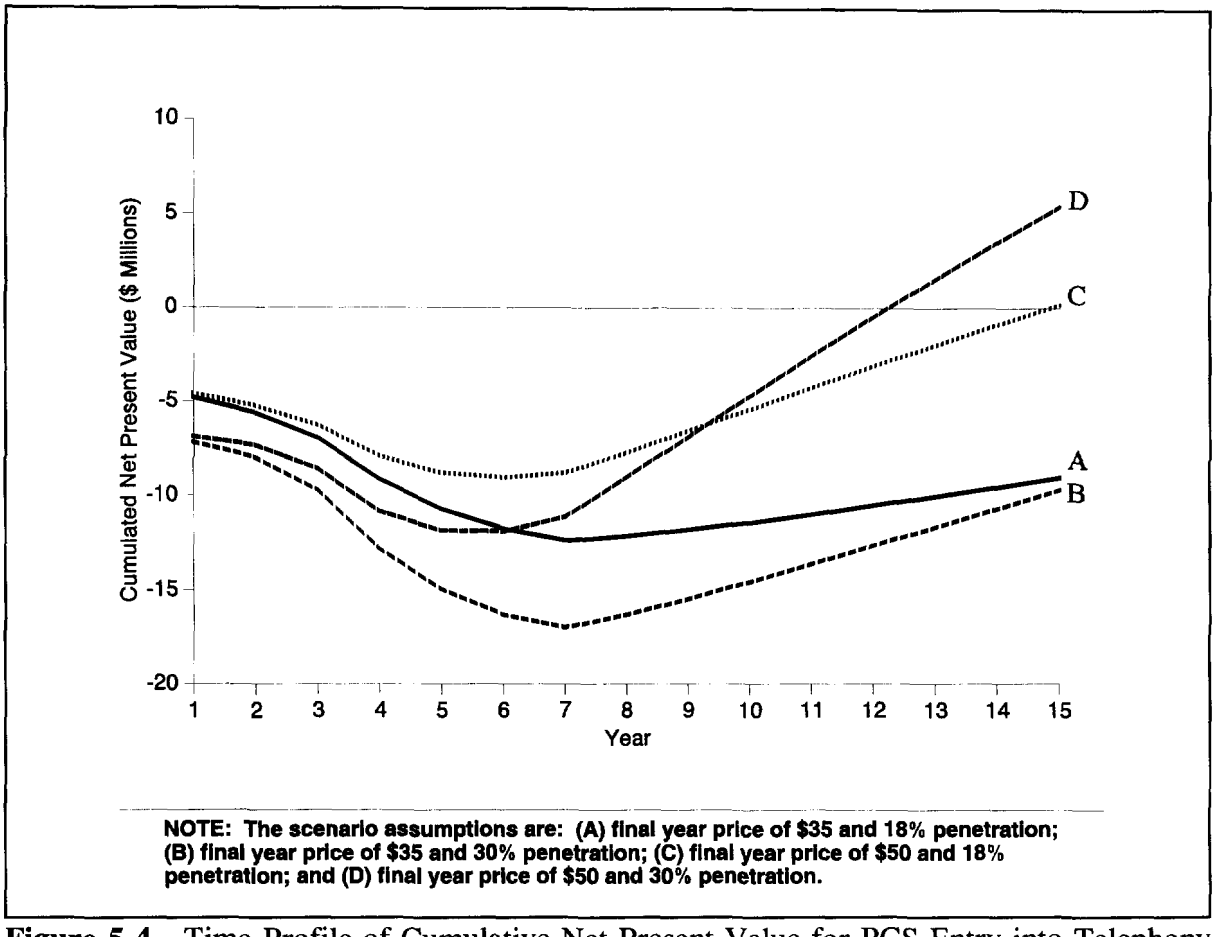

Figure 5.4. Time Profile of Cumulative Net Present Value for PCS Entry into Telephony for Scenarios A through D.

5.6 Business Case Conclusions

Overall, our estimates show that it will be a long hard climb for cable and wireless providers who plan to provide local telephone service in competition with the LECs. The projects will take anywhere from 5 to 8 years to generate a positive cash flow and the ultimate profitability of the new entrant is subject to a fair degree of risk. Those who believe that entry will be quick and easy are in for a big surprise when they meet the hard, cold facts of the income statement and they must incur the costs of being in the local telephone business.

In this chapter, we have examined in detail the fundamental economic and financial considerations associated with entry into the local exchange telephone service business. As indicated by a variety of pilot projects and technical trials, incumbent cable television systems, as well as present (and future) wireless services providers, possess *opportunities* that are probably far superior to those available to firms with no telecommunications presence in a given local market; however, entry and success by CATV and wireless providers will be neither risk-free nor immediate. As with virtually all technology ventures, it will take both time and money — and there are no guaranteed returns.

Appendix 5 | DETAILED BUSINESS CASE SCENARIO RESULTS

Cable Scenario A
Feb 4, 1994

Capital Budgeting Analysis: 15 Year Plan
Additional Expenses and Revenues
Cable Entry into Local Telephone Service

	Base Information	Year 1	Year 2	Year 3
Capital Investment Expenses		$7,506,000	$234,000	$936,000
Capital Investment Per Target Subscriber	$745			
fixed	$160	$160		
variable	$585	$585	$585	$585
ratio	21%			
build–to margin	1.1			
target subscribers	39,600			
		1%	1%	2%
Market Size	200,000	200,000	200,000	200,000
Percent Penetration	18%	1.00%	1.20%	2.00%
Subscribers		2,000	2,400	4,000
Average Price Per Month	$35	$31.00	$31.29	$31.57
Local Tel Discount Factor		0.800	0.814	0.829
Sales Revenue		$744,000	$901,029	$1,515,429
Variable Costs		$1,900,000	$1,900,000	$1,900,000
Marketing		$136,000	$163,200	$272,000
Customer Service and Maintenance		$192,456	$230,481	$381,024
Interconnection Costs				
		$558,446	$531,180	$558,324
Depreciation				
		$2,786,902	$2,824,861	$3,111,348
Total Expenses		($2,042,902)	($1,923,832)	($1,595,920)
Earnings before taxes		($796,732)	($750,295)	($622,409)
Taxes				
		($1,246,170)	($1,173,538)	($973,511)
Net income				
		$558,446	$531,180	$558,324
Add back depreciation				
		($8,193,724)	($876,357)	($1,351,187)
Net Cash Flow				
Net Present Value (at 14%)	($6,907,056)	($7,187,477)	($7,861,806)	($8,773,818)
Net Present Value (at 18%)	($7,598,134)	($6,943,834)	($7,573,220)	($8,395,594)
Net Present Value (at 14%) per sub	($174)			
Net Present Value (at 18%) per sub	($192)			

Cable Scenario A Feb 4, 1994 Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service	Year 4	Year 5	Year 6	Year 7	Year 8
Capital Investment Expenses	$2,340,000	$2,340,000	$2,340,000	$2,340,000	$1,170,000
Capital Investment Per Target Subscriber					
fixed					
variable	$585	$585	$585	$585	$585
ratio					
build–to margin					
target subscribers					
	4%	6%	8%	10%	11%
Market Size	200,000	200,000	200,000	200,000	200,000
Percent Penetration	4.00%	6.00%	8.00%	10.00%	11.00%
Subscribers	8,000	12,000	16,000	20,000	22,000
Average Price Per Month	$31.86	$32.14	$32.43	$32.71	$33.00
Local Tel Discount Factor	0.843	0.857	0.871	0.886	0.900
Sales Revenue	$3,058,286	$4,628,571	$6,226,286	$7,851,429	$8,712,000
Variable Costs					
Marketing	$1,900,000	$1,900,000	$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance	$544,000	$816,000	$1,088,000	$1,360,000	$1,496,000
Interconnection Costs	$746,496	$1,096,416	$1,430,784	$1,749,600	$1,903,176
Depreciation	$687,754	$806,830	$916,380	$1,017,165	$1,022,840
Total Expenses	$3,878,250	$4,619,246	$5,335,164	$6,026,765	$6,322,016
Earnings before taxes	($819,965)	$9,325	$891,122	$1,824,663	$2,389,984
Taxes	($319,786)	$3,637	$347,538	$711,619	$932,094
Net income	($500,178)	$5,689	$543,585	$1,113,045	$1,457,890
Add back depreciation	$687,754	$806,830	$916,380	$1,017,165	$1,022,840
Net Cash Flow	($2,152,424)	($1,527,481)	($880,369)	($210,091)	$1,310,443
Net Present Value (at 14%)	($10,048,226)	($10,841,552)	($11,242,637)	($11,326,597)	($10,867,210)
Net Present Value (at 18%)	($9,505,791)	($10,173,467)	($10,499,583)	($10,565,536)	($10,216,909)
Net Present Value (at 14%) per sub					
Net Present Value (at 18%) per sub					

Cable Scenario A Feb 4, 1994 Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service	Year 9	Year 10	Year 11	Year 12	Year 13
Capital Investment Expenses	$1,170,000	$1,170,000	$1,170,000	$1,170,000	$1,170,000
Capital Investment Per Target Subscriber					
fixed					
variable	$585	$585	$585	$585	$585
ratio					
build-to margin					
target subscribers					
	12%	13%	14%	15%	16%
Market Size	200,000	200,000	200,000	200,000	200,000
Percent Penetration	12.00%	13.00%	14.00%	15.00%	16.00%
Subscribers	24,000	26,000	28,000	30,000	32,000
Average Price Per Month	$33.29	$33.57	$33.86	$34.14	$34.43
Local Tel Discount Factor	0.914	0.929	0.943	0.957	0.971
Sales Revenue	$9,586,286	$10,474,286	$11,376,000	$12,291,429	$13,220,571
Variable Costs					
Marketing	$1,900,000	$1,900,000	$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance	$1,632,000	$1,768,000	$1,904,000	$2,040,000	$2,176,000
Interconnection Costs	$2,052,864	$2,198,664	$2,340,576	$2,478,600	$2,612,736
Depreciation	$1,028,061	$1,032,864	$1,037,283	$1,041,348	$1,045,088
Total Expenses	$6,612,925	$6,899,528	$7,181,859	$7,459,948	$7,733,824
Earnings before taxes	$2,973,361	$3,574,758	$4,194,141	$4,831,480	$5,486,747
Taxes	$1,159,611	$1,394,156	$1,635,715	$1,884,277	$2,139,831
Net income	$1,813,750	$2,180,602	$2,558,426	$2,947,203	$3,346,916
Add back depreciation	$1,028,061	$1,032,864	$1,037,283	$1,041,348	$1,045,088
Net Cash Flow	$1,671,535	$2,043,201	$2,425,452	$2,818,303	$3,221,762
Net Present Value (at 14%)	($10,353,199)	($9,802,058)	($9,228,154)	($8,643,190)	($8,056,605)
Net Present Value (at 18%)	($9,840,051)	($9,449,668)	($9,056,941)	($8,670,215)	($8,295,563)
Net Present Value (at 14%) per sub					
Net Present Value (at 18%) per sub					

Cable Scenario A Feb 4, 1994 Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service	Year 14	Year 15
Capital Investment Expenses	$1,170,000	$1,170,000
Capital Investment Per Target Subscriber		
fixed		
variable	$585	$585
ratio		
build–to margin		1.1
target subscribers		
	17%	18%
Market Size	200,000	200,000
Percent Penetration	17.00%	18.00%
Subscribers	34,000	36,000
Average Price Per Month	$34.71	$35.00
Local Tel Discount Factor	0.986	1.000
Sales Revenue	$14,163,429	$15,120,000
Variable Costs		
Marketing	$1,900,000	$1,900,000
Customer Service and Maintenance	$2,312,000	$2,448,000
Interconnection Costs	$2,742,984	$2,869,344
Depreciation	$1,048,529	$1,051,695
Total Expenses	$8,003,513	$8,269,039
Earnings before taxes	$6,159,915	$6,850,961
Taxes	$2,402,367	$2,671,875
Net income	$3,757,548	$4,179,086
Add back depreciation	$1,048,529	$1,051,695
Net Cash Flow	$3,635,842	$4,060,551
Net Present Value (at 14%)	($7,475,925)	($6,907,056)
Net Present Value (at 18%)	($7,937,255)	($7,598,134)
Net Present Value (at 14%) per sub		
Net Present Value (at 18%) per sub		

Cable Scenario B Feb 4, 1994	Base Information	Year 1	Year 2	Year 3
Capital Budgeting Analysis: 15 Year Plan **Additional Expenses and Revenues** **Cable Entry into Local Telephone Service**				
Capital Investment Expenses		$12,309,840	$383,760	$1,535,040
Capital Investment Per Target Subscriber	$745			
fixed	$160	$160		
variable	$585	$585	$585	$585
ratio	21%			
build–to margin	1.1			
target subscribers	64,944			
		1%	1%	2%
Market Size	200,000	200,000	200,000	200,000
Percent Penetration	30%	1.64%	1.97%	3.28%
Subscribers		3,280	3,936	6,560
Average Price Per Month	$35	$31.00	$31.29	$31.57
Local Tel Discount Factor		0.800	0.814	0.829
Sales Revenue		$1,220,160	$1,477,687	$2,485,303
Variable Costs				
Marketing		$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance		$223,040	$267,648	$446,080
Interconnection Costs		$313,587	$375,050	$616,718
Depreciation		$915,852	$871,136	$915,652
Total Expenses		$3,352,480	$3,413,834	$3,878,449
Earnings before taxes		($2,132,320)	($1,936,147)	($1,393,147)
Taxes		($831,605)	($755,097)	($543,327)
Net income		($1,300,715)	($1,181,050)	($849,819)
Add back depreciation		$915,852	$871,136	$915,652
Net Cash Flow		($12,694,703)	($693,674)	($1,469,208)
Net Present Value (at 14%)	($6,191,582)	($11,135,704)	($11,669,464)	($12,661,137)
Net Present Value (at 18%)	($8,275,192)	($10,758,223)	($11,256,409)	($12,150,614)
Net Present Value (at 14%) per sub	($95)			
Net Present Value (at 18%) per sub	($127)			

Cable Scenario B Feb 4, 1994 Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service	Year 4	Year 5	Year 6	Year 7	Year 8
Capital Investment Expenses	$3,837,600	$3,837,600	$3,837,600	$3,837,600	$1,918,800
Capital Investment Per Target Subscriber					
fixed					
variable	$585	$585	$585	$585	$585
ratio					
build–to margin					
target subscribers					
	4%	6%	8%	10%	11%
Market Size	200,000	200,000	200,000	200,000	200,000
Percent Penetration	6.56%	9.84%	13.12%	16.40%	18.04%
Subscribers	13,120	19,680	26,240	32,800	36,080
Average Price Per Month	$31.86	$32.14	$32.43	$32.71	$33.00
Local Tel Discount Factor	0.843	0.857	0.871	0.886	0.900
Sales Revenue	$5,015,589	$7,590,857	$10,211,109	$12,876,343	$14,287,680
Variable Costs					
Marketing	$1,900,000	$1,900,000	$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance	$892,160	$1,338,240	$1,784,320	$2,230,400	$2,453,440
Interconnection Costs	$1,191,607	$1,724,667	$2,215,899	$2,665,302	$2,874,318
Depreciation	$1,127,917	$1,323,201	$1,502,863	$1,668,151	$1,677,458
Total Expenses	$5,111,684	$6,286,108	$7,403,081	$8,463,853	$8,905,215
Earnings before taxes	($96,095)	$1,304,749	$2,808,027	$4,412,490	$5,382,465
Taxes	($37,477)	$508,852	$1,095,131	$1,720,871	$2,099,161
Net income	($58,618)	$795,897	$1,712,897	$2,691,619	$3,283,304
Add back depreciation	$1,127,917	$1,323,201	$1,502,863	$1,668,151	$1,677,458
Net Cash Flow	($2,768,301)	($1,718,502)	($622,123)	$521,912	$3,041,714
Net Present Value (at 14%)	($14,300,193)	($15,192,730)	($15,476,160)	($15,267,585)	($14,201,284)
Net Present Value (at 18%)	($13,578,472)	($14,[illegible]046)	($14,560,100)	($14,396,258)	($13,587,046)
Net Present Value (at 14%) per sub					
Net Present Value (at 18%) per sub					

Cable Scenario B Feb 4, 1994 Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service	Year 9	Year 10	Year 11	Year 12	Year 13
Capital Investment Expenses	$1,918,800	$1,918,800	$1,918,800	$1,918,800	$1,918,800
Capital Investment Per Target Subscriber					
fixed					
variable	$585	$585	$585	$585	$585
ratio					
build-to margin					
target subscribers					
	12%	13%	14%	15%	16%
Market Size	200,000	200,000	200,000	200,000	200,000
Percent Penetration	19.68%	21.32%	22.96%	24.60%	26.24%
Subscribers	39,360	42,640	45,920	49,200	52,480
Average Price Per Month	$33.29	$33.57	$33.86	$34.14	$34.43
Local Tel Discount Factor	0.914	0.929	0.943	0.957	0.971
Sales Revenue	$15,721,509	$17,177,829	$18,656,640	$20,157,943	$21,681,737
Variable Costs					
Marketing	$1,900,000	$1,900,000	$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance	$2,676,480	$2,899,520	$3,122,560	$3,345,600	$3,568,640
Interconnection Costs	$3,072,876	$3,260,978	$3,438,622	$3,605,809	$3,762,539
Depreciation	$1,686,020	$1,693,897	$1,701,144	$1,707,811	$1,713,945
Total Expenses	$9,335,376	$9,754,394	$10,162,326	$10,559,220	$10,945,124
Earnings before taxes	$6,386,133	$7,423,434	$8,494,314	$9,598,723	$10,736,613
Taxes	$2,490,592	$2,895,139	$3,312,783	$3,743,502	$4,187,279
Net income	$3,895,541	$4,528,295	$5,181,532	$5,855,221	$6,549,334
Add back depreciation	$1,686,020	$1,693,897	$1,701,144	$1,707,811	$1,713,945
Net Cash Flow	$3,662,523	$4,303,163	$4,963,654	$5,644,017	$6,344,270
Net Present Value (at 14%)	($13,075,029)	($11,914,278)	($10,739,791)	($9,568,324)	($8,413,226)
Net Present Value (at 18%)	($12,761,308)	($11,939,127)	($11,135,416)	($10,360,947)	($9,623,186)
Net Present Value (at 14%) per sub					
Net Present Value (at 18%) per sub					

Cable Scenario B Feb 4, 1994	Year 14	Year 15
Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service		
Capital Investment Expenses	$1,918,800	$1,918,800
Capital Investment Per Target Subscriber fixed variable	$585	$585
ratio build–to margin		1.1
target subscribers	17%	18%
Market Size	200,000	200,000
Percent Penetration	27.88%	29.52%
Subscribers	55,760	59,040
Average Price Per Month	$34.71	$35.00
Local Tel Discount Factor	0.986	1.000
Sales Revenue	$23,228,023	$24,796,800
Variable Costs		
Marketing	$1,900,000	$1,900,000
Customer Service and Maintenance	$3,791,680	$4,014,720
Interconnection Costs	$3,908,812	$4,044,627
Depreciation	$1,719,588	$1,724,780
Total Expenses	$11,320,080	$11,684,127
Earnings before taxes	$11,907,943	$13,112,673
Taxes	$4,644,098	$5,113,942
Net income	$7,263,845	$7,998,731
Add back depreciation	$1,719,588	$1,724,780
Net Cash Flow	$7,064,430	$7,804,512
Net Present Value (at 14%)	($7,284,966)	($6,191,582)
Net Present Value (at 18%)	($8,926,994)	($8,275,192)
Net Present Value (at 14%) per sub		
Net Present Value (at 18%) per sub		

Cable Scenario C Feb 4, 1994 c Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service	Base Information	Year 1	Year 2	Year 3
Capital Investment Expenses		$7,506,000	$234,000	$936,000
Capital Investment Per Target Subscriber	$745			
fixed	$160	$160		
variable	$585	$585	$585	$585
ratio	21%			
build–to margin	1.1			
target subscribers	39,600			
		1%	1%	2%
Market Size	200,000	200,000	200,000	200,000
Percent Penetration	18%	1.00%	1.20%	2.00%
Subscribers		2,000	2,400	4,000
Average Price Per Month	$50	$46.00	$46.29	$46.57
Local Tel Discount Factor		0.800	0.814	0.829
Sales Revenue		$1,104,000	$1,333,029	$2,235,429
Variable Costs				
Marketing		$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance		$136,000	$163,200	$272,000
Interconnection Costs		$192,456	$230,481	$381,024
Depreciation		$558,446	$531,180	$558,324
Total Expenses		$2,786,902	$2,824,861	$3,111,348
Earnings before taxes		($1,682,902)	($1,491,832)	($875,920)
Taxes		($656,332)	($581,815)	($341,609)
Net income		($1,026,570)	($910,018)	($534,311)
Add back depreciation		$558,446	$531,180	$558,324
Net Cash Flow		($7,974,124)	($612,837)	($911,987)
Net Present Value (at 14%)	$2,295,272	($6,994,846)	($7,466,404)	($8,081,969)
Net Present Value (at 18%)	($747,675)	($6,757,732)	($7,197,863)	($7,752,926)
Net Present Value (at 14%) per sub	$58			
Net Present Value (at 18%) per sub	($19)			

Cable Scenario C Feb 4, 1994 Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service	Year 4	Year 5	Year 6	Year 7	Year 8
Capital Investment Expenses	$2,340,000	$2,340,000	$2,340,000	$2,340,000	$1,170,000
Capital Investment Per Target Subscriber					
fixed					
variable	$585	$585	$585	$585	$585
ratio					
build–to margin					
target subscribers					
	4%	6%	8%	10%	11%
Market Size	200,000	200,000	200,000	200,000	200,000
Percent Penetration	4.00%	6.00%	8.00%	10.00%	11.00%
Subscribers	8,000	12,000	16,000	20,000	22,000
Average Price Per Month	$46.86	$47.14	$47.43	$47.71	$48.00
Local Tel Discount Factor	0.843	0.857	0.871	0.886	0.900
Sales Revenue	$4,498,286	$6,788,571	$9,106,286	$11,451,429	$12,672,000
Variable Costs					
Marketing	$1,900,000	$1,900,000	$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance	$544,000	$816,000	$1,088,000	$1,360,000	$1,496,000
Interconnection Costs	$746,496	$1,096,416	$1,430,784	$1,749,600	$1,903,176
Depreciation	$687,754	$806,830	$916,380	$1,017,165	$1,022,840
Total Expenses	$3,878,250	$4,619,246	$5,335,164	$6,026,765	$6,322,016
Earnings before taxes	$620,035	$2,169,325	$3,771,122	$5,424,663	$6,349,984
Taxes	$241,814	$846,037	$1,470,738	$2,115,619	$2,476,494
Net income	$378,222	$1,323,289	$2,300,385	$3,309,045	$3,873,490
Add back depreciation	$687,754	$806,830	$916,380	$1,017,165	$1,022,840
Net Cash Flow	($1,274,024)	($209,881)	$876,431	$1,985,909	$3,726,043
Net Present Value (at 14%)	($8,836,294)	($8,945,300)	($8,546,010)	($7,752,367)	($6,446,168)
Net Present Value (at 18%)	($8,410,053)	($8,501,794)	($8,177,137)	($7,553,711)	($6,562,441)
Net Present Value (at 14%) per sub					
Net Present Value (at 18%) per sub					

Cable Scenario C Feb 4, 1994	Year 9	Year 10	Year 11	Year 12	Year 13
Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service					
Capital Investment Expenses	$1,170,000	$1,170,000	$1,170,000	$1,170,000	$1,170,000
Capital Investment Per Target Subscriber fixed variable ratio build–to margin target subscribers	$585	$585	$585	$585	$585
	12%	13%	14%	15%	16%
Market Size	200,000	200,000	200,000	200,000	200,000
Percent Penetration	12.00%	13.00%	14.00%	15.00%	16.00%
Subscribers	24,000	26,000	28,000	30,000	32,000
Average Price Per Month	$48.29	$48.57	$48.86	$49.14	$49.43
Local Tel Discount Factor	0.914	0.929	0.943	0.957	0.971
Sales Revenue	$13,906,286	$15,154,286	$16,416,000	$17,691,429	$18,980,571
Variable Costs					
Marketing	$1,900,000	$1,900,000	$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance	$1,632,000	$1,768,000	$1,904,000	$2,040,000	$2,176,000
Interconnection Costs	$2,052,864	$2,198,664	$2,340,576	$2,478,600	$2,612,736
Depreciation	$1,028,061	$1,032,864	$1,037,283	$1,041,348	$1,045,088
Total Expenses	$6,612,925	$6,899,528	$7,181,859	$7,459,948	$7,733,824
Earnings before taxes	$7,293,361	$8,254,758	$9,234,141	$10,231,480	$11,246,747
Taxes	$2,844,411	$3,219,356	$3,601,315	$3,990,277	$4,386,231
Net income	$4,448,950	$5,035,402	$5,632,826	$6,241,203	$6,860,516
Add back depreciation	$1,028,061	$1,032,864	$1,037,283	$1,041,348	$1,045,088
Net Cash Flow	$4,306,735	$4,898,001	$5,499,852	$6,112,303	$6,735,362
Net Present Value (at 14%)	($5,121,813)	($3,800,608)	($2,499,247)	($1,230,583)	($4,280)
Net Present Value (at 18%)	($5,591,461)	($4,655,627)	($3,765,097)	($2,926,369)	($2,143,129)
Net Present Value (at 14%) per sub Net Present Value (at 18%) per sub					

Cable Scenario C Feb 4, 1994	Year 14	Year 15
Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service		
Capital Investment Expenses	$1,170,000	$1,170,000
Capital Investment Per Target Subscriber		
fixed		
variable	$585	$585
ratio		
build–to margin		1.1
target subscribers		
	17%	18%
Market Size	200,000	200,000
Percent Penetration	17.00%	18.00%
Subscribers	34,000	36,000
Average Price Per Month	$49.71	$50.00
Local Tel Discount Factor	0.986	1.000
Sales Revenue	$20,283,429	$21,600,000
Variable Costs		
Marketing	$1,900,000	$1,900,000
Customer Service and Maintenance	$2,312,000	$2,448,000
Interconnection Costs	$2,742,984	$2,869,344
Depreciation	$1,048,529	$1,051,695
Total Expenses	$8,003,513	$8,269,039
Earnings before taxes	$12,279,915	$13,330,961
Taxes	$4,789,167	$5,199,075
Net income	$7,490,748	$8,131,886
Add back depreciation	$1,048,529	$1,051,695
Net Cash Flow	$7,369,042	$8,013,351
Net Present Value (at 14%)	$1,172,630	$2,295,272
Net Present Value (at 18%)	($1,416,918)	($747,675)
Net Present Value (at 14%) per sub		
Net Present Value (at 18%) per sub		

Cable Scenario D Feb 4, 1994	Base Information	Year 1	Year 2	Year 3
Capital Budgeting Analysis: 15 Year Plan Additional Expenses and Revenues Cable Entry into Local Telephone Service				
Capital Investment Expenses		$12,309,840	$383,760	$1,535,040
Capital Investment Per Target Subscriber	$745			
fixed	$160	$160		
variable	$585	$585	$585	$585
ratio	21%			
build–to margin	1.1			
target subscribers	64,944			
		1%	1%	2%
Market Size	200,000	200,000	200,000	200,000
Percent Penetration	30%	1.64%	1.97%	3.28%
Subscribers		3,280	3,936	6,560
Average Price Per Month	$50	$46.00	$46.29	$46.57
Local Tel Discount Factor		0.800	0.814	0.829
Sales Revenue		$1,810,560	$2,186,167	$3,666,103
Variable Costs				
Marketing		$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance		$223,040	$267,648	$446,080
Interconnection Costs		$313,587	$375,050	$616,718
Depreciation		$915,852	$871,136	$915,652
Total Expenses		$3,352,480	$3,413,834	$3,878,449
Earnings before taxes		($1,541,920)	($1,227,667)	($212,347)
Taxes		($601,349)	($478,790)	($82,815)
Net income		($940,571)	($748,877)	($129,531)
Add back depreciation		$915,852	$871,136	$915,652
Net Cash Flow		($12,334,559)	($261,501)	($748,920)
Net Present Value (at 14%)	$8,900,237	($10,819,788)	($11,021,005)	($11,526,504)
Net Present Value (at 18%)	$2,959,561	($10,453,016)	($10,640,822)	($11,096,638)
Net Present Value (at 14%) per sub	$137			
Net Present Value (at 18%) per sub	$46			

Cable Scenario D Feb 4, 1994	Year 4	Year 5	Year 6	Year 7	Year 8
Capital Budgeting Analysis: 15 Year Plan **Additional Expenses and Revenues** **Cable Entry into Local Telephone Service**					
Capital Investment Expenses	$3,837,600	$3,837,600	$3,837,600	$3,837,600	$1,918,800
Capital Investment Per Target Subscriber					
fixed					
variable	$585	$585	$585	$585	$585
ratio					
build-to margin					
target subscribers					
	4%	6%	8%	10%	11%
Market Size	200,000	200,000	200,000	200,000	200,000
Percent Penetration	6.56%	9.84%	13.12%	16.40%	18.04%
Subscribers	13,120	19,680	26,240	32,800	36,080
Average Price Per Month	$46.86	$47.14	$47.43	$47.71	$48.00
Local Tel Discount Factor	0.843	0.857	0.871	0.886	0.900
Sales Revenue	$7,377,189	$11,133,257	$14,934,309	$18,780,343	$20,782,080
Variable Costs					
Marketing	$1,900,000	$1,900,000	$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance	$892,160	$1,338,240	$1,784,320	$2,230,400	$2,453,440
Interconnection Costs	$1,191,607	$1,724,667	$2,215,899	$2,665,302	$2,874,318
Depreciation	$1,127,917	$1,323,201	$1,502,863	$1,668,151	$1,677,458
Total Expenses	$5,111,684	$6,286,108	$7,403,081	$8,463,853	$8,905,215
Earnings before taxes	$2,265,505	$4,847,149	$7,531,227	$10,316,490	$11,876,865
Taxes	$883,547	$1,890,388	$2,937,179	$4,023,431	$4,631,977
Net income	$1,381,958	$2,956,761	$4,594,049	$6,293,059	$7,244,888
Add back depreciation	$1,127,917	$1,323,201	$1,502,863	$1,668,151	$1,677,458
Net Cash Flow	($1,327,725)	$442,362	$2,259,029	$4,123,352	$7,003,298
Net Present Value (at 14%)	($12,312,624)	($12,082,875)	($11,053,692)	($9,405,847)	($6,950,777)
Net Present Value (at 18%)	($11,781,463)	($11,588,103)	($10,751,287)	($9,456,864)	($7,593,719)
Net Present Value (at 14%) per sub					
Net Present Value (at 18%) per sub					

Cable Scenario D Feb 4, 1994	Year 9	Year 10	Year 11	Year 12	Year 13
Capital Budgeting Analysis: 15 Year Plan **Additional Expenses and Revenues** **Cable Entry into Local Telephone Service**					
Capital Investment Expenses	$1,918,800	$1,918,800	$1,918,800	$1,918,800	$1,918,800
Capital Investment Per Target Subscriber					
fixed					
variable	$585	$585	$585	$585	$585
ratio					
build-to margin					
target subscribers					
	12%	13%	14%	15%	16%
Market Size	200,000	200,000	200,000	200,000	200,000
Percent Penetration	19.68%	21.32%	22.96%	24.60%	26.24%
Subscribers	39,360	42,640	45,920	49,200	52,480
Average Price Per Month	$48.29	$48.57	$48.86	$49.14	$49.43
Local Tel Discount Factor	0.914	0.929	0.943	0.957	0.971
Sales Revenue	$22,806,309	$24,853,029	$26,922,240	$29,013,943	$31,128,137
Variable Costs					
Marketing	$1,900,000	$1,900,000	$1,900,000	$1,900,000	$1,900,000
Customer Service and Maintenance	$2,676,480	$2,899,520	$3,122,560	$3,345,600	$3,568,640
Interconnection Costs	$3,072,876	$3,260,978	$3,438,622	$3,605,809	$3,762,539
Depreciation	$1,686,020	$1,693,897	$1,701,144	$1,707,811	$1,713,945
Total Expenses	$9,335,376	$9,754,394	$10,162,326	$10,559,220	$10,945,124
Earnings before taxes	$13,470,933	$15,098,634	$16,759,914	$18,454,723	$20,183,013
Taxes	$5,253,664	$5,888,467	$6,536,367	$7,197,342	$7,871,375
Net income	$8,217,269	$9,210,167	$10,223,548	$11,257,381	$12,311,638
Add back depreciation	$1,686,020	$1,693,897	$1,701,144	$1,707,811	$1,713,945
Net Cash Flow	$7,984,251	$8,985,035	$10,005,670	$11,046,177	$12,106,574
Net Present Value (at 14%)	($4,495,556)	($2,071,899)	$295,617	$2,588,351	$4,792,588
Net Present Value (at 18%)	($5,793,621)	($4,076,900)	($2,456,792)	($941,041)	$466,806
Net Present Value (at 14%) per sub					
Net Present Value (at 18%) per sub					

Cable Scenario D
Feb 4, 1994

Capital Budgeting Analysis: 15 Year Plan
Additional Expenses and Revenues
Cable Entry into Local Telephone Service

	Year 14	Year 15
Capital Investment Expenses	$1,918,800	$1,918,800
Capital Investment Per Target Subscriber		
fixed		
variable	$585	$585
ratio		
build–to margin		1.1
target subscribers		
	17%	18%
Market Size	200,000	200,000
Percent Penetration	27.88%	29.52%
Subscribers	55,760	59,040
Average Price Per Month	$49.71	$50.00
Local Tel Discount Factor	0.986	1.000
Sales Revenue	$33,264,823	$35,424,000
Variable Costs		
Marketing	$1,900,000	$1,900,000
Customer Service and Maintenance	$3,791,680	$4,014,720
Interconnection Costs	$3,908,812	$4,044,627
Depreciation	$1,719,588	$1,724,780
Total Expenses	$11,320,080	$11,684,127
Earnings before taxes	$21,944,743	$23,739,873
Taxes	$8,558,450	$9,258,550
Net income	$13,386,293	$14,481,323
Add back depreciation	$1,719,588	$1,724,780
Net Cash Flow	$13,186,878	$14,287,104
Net Present Value (at 14%)	$6,898,664	$8,900,237
Net Present Value (at 18%)	$1,766,358	$2,959,561
Net Present Value (at 14%) per sub		
Net Present Value (at 18%) per sub		